### DEPARTMENT of ENVIRONMENTAL SERVICES Water Supply & Pollution Control Division - Biology Bureau

#### LAKE TROPHIC DATA

#### MORPHOMETRIC:

Lake: PLEASANT LAKE Lake Area (ha): 245.20 Maximum depth (m): 28.6

Mean depth (m): 10.5

Volume (m³): 25761000 Town: NEW LONDON County: Merrimack Latitude: 43°25'29" N Relative depth: 1.6
Longitude: 71°57'03" W Shore configuration: 1.30
Elevation (ft): 805 Areal water load (m/yr): 6.93
Shore length (m): 7200 Flushing rate (yr<sup>-1</sup>): 0.70
Watershed area (ha): 3030.3 P retention coeff.: 0.60
% watershed ponded: 0.0 Lake type: natural w/dam River Basin: Merrimack

BIOLOGICAL:	1 February 1994	9 July 1993
DOM. PHYTOPLANKTON (% TOTAL) #1	SYNURA 80%	ASTERIONELLA 40%
#2	RHIZOSOLENIA 10%	DINOBRYON 30%
#3	ASTERIONELLA 10%	RHIZOSOLENIA 20%
PHYTOPLANKTON ABUNDANCE (cells/mL)		295
CHLOROPHYLL-A (µg/L)		1.28
DOM. ZOOPLANKTON (% TOTAL) #1	GASTROPUS 75%	GREEN CILIATE SPP 96%
#2		
#3		
ROTIFERS/LITER	209	33
MICROCRUSTACEA/LITER	35	33
ZOOPLANKTON ABUNDANCE (#/L)	244	396
VASCULAR PLANT ABUNDANCE		Sparse
SECCHI DISK TRANSPARENCY (m)		8.7
BOTTOM DISSOLVED OXYGEN (mg/L)	11.7	8.4
BACTERIA (E. coli, #/100 ml) #1		
#2		
#3		

#### SUMMER THERMAL STRATIFICATION:

#### stratified

Depth of thermocline (m): Hypolimnion volume  $(m^3)$ : 6435000 : None

Anoxic volume (m³)

HEMICAL: Lake: PLEASANT LAKE Town: NEW LONDON					
	1 Febru	uary 1994	9 3	July 1993	
DEPTH (m)	6.0	12.0	2.0	8.0	15.0
pH (units)	6.7	6.6	6.8	6.9	6.2
A.N.C. (Alkalinity)	3.8	3.7	4.1	4.2	3.8
NITRATE NITROGEN	0.05	< 0.05	< 0.04		< 0.04
TOTAL KJELDAHL NITROGEN	0.16	0.18	0.26	0.14	0.27
TOTAL PHOSPHORUS	0.006	0.008	0.003	0.004	0.005
CONDUCTIVITY (µmhos/cm)	42.0	42.9	41.3	40.4	41.2
APPARENT COLOR (cpu)	6	8	< 5	8	11
MAGNESIUM			0.50		
CALCIUM			2.6		
SODIUM			3.6		
POTASSIUM			0.48		
CHLORIDE	, 6	6	< 6		< 6
SULFATE	6	6	5		5
TN : TP	35	23	87		54
CALCITE SATURATION INDEX	*****		3.5	1.00.1111.0	

All results in mg/L unless indicated otherwise

#### TROPHIC CLASSIFICATION: 1993

D.O.	S.D.	PLANT	CHL	TOTAL	CLASS
0	0	0	0	0	Oligo.

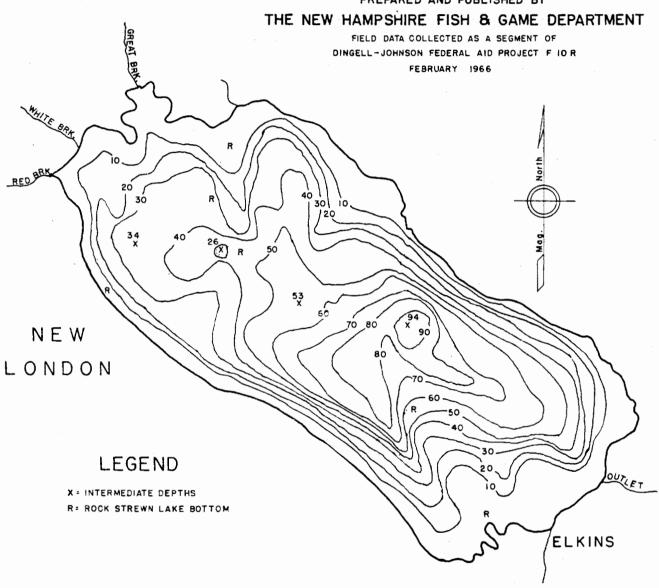
# **COMMENTS:**

- 1. This lake was previously surveyed and classified in 1979. There was no change in classification or in water quality between the two years. The lake received zero trophic points in both years.
- 2. This is the quintessential oligotrophic lake: large, deep, crystal-clear lake with rocky/sandy shoreline and very little plant growth. The water clarity in this lake is due to low nutrient levels and not to acid conditions, which is the case in many New Hampshire lakes.
- 3. A paved boat ramp was present next to the dam, between the dam and Elkins town beach.
- 4. <u>Chroomonas</u> (30%), <u>Merismopedia</u> (15%) and tiny green flagellates (15%) were the dominant genera of wholewater phytoplankton.

# PLEASANT LAKE

DEPTH CONTOUR CHART

PREPARED AND PUBLISHED BY



NOTE:-

# THIS CHART IS NOT INTENDED AS A NAVIGATION MAP.

ALL SOUNDINGS COMPUTED AT NORMAL FULL POOL BY AN ELECTRONIC RECORDING SOUNDER.

CONTOUR LINES ARE APPROXIMATE AND SOUNDINGS ARE ACCURATE ONLY WITHIN THE LIMITS OF THE FIELD METHODS USED.



Contour intervol IO feet

#### FIELD DATA SHEET

LAKE: PLEASANT LAKE

DATE: 07/09/93

TOWN: NEW LONDON

WEATHER: HOT, HAZY & HUMID; LT.BREEZE

DEPTH	TEMP	*DISSOLVED	OXYGEN
(M)	(°C)	OXYGEN	SATURATION
0.1	25.5	9.0	109 %
1.0	25.5	9.0	109 %
2.0	25.5	8.7	104 %
3.0	25.0	8.2	99 %
4.0	22.5	8.3	94 %
5.0	21.0	8.5	94 %
6.0	19.0	8.9	94 %
7.0	17.5	9.1	94 %
8.0	15.0	9.5	93 %
9.0	14.0	9.6	92 %
10.0	11.0	9.4	84 %
11.0	9.0	8.8	75 %
12.0	7.5	8.6	70 %
13.0	7.0	8.7	70 %
14.0	6.5	8.7	69 %
15.0	6.2	8.4	67 %
17.0	6.0	8.4	67 %
19.0	5.5	8.4	65 %

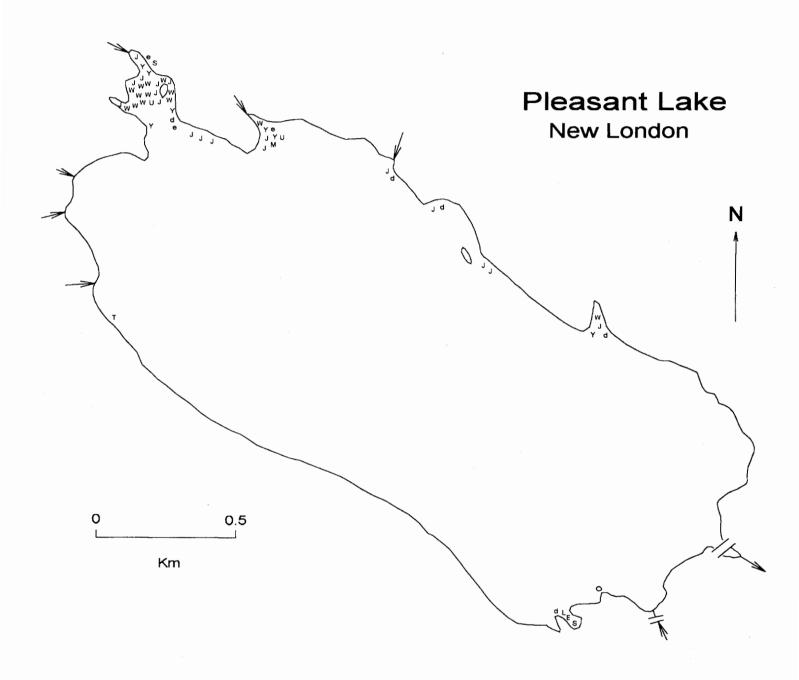
SECCHI DISK (m): 8.7

COMMENTS:

BOTTOM DEPTH (m): 20.0

TIME: 1215

\*Dissolved oxygen values are in mg/L



# AQUATIC PLANT SURVEY

LAK	E: PLEASANT LAKE	TOWN: NEW LONDON	DATE: 07/09/9	
Кеу	PLANT	NAME	ABUNDANCE	
	GENERIC	COMMON		
S	Sparganium	Bur reed	Sparse	
E	Eriocaulon septangulare	Pipewort	Sparse	
L	Lilium	Lily	Sparse	
d	Dulichium arundinaceum	Three-way sedge	Sparse	
Т	Typha	Cattail	Sparse	
Y	Nuphar	Yellow water lily	Sparse	
W	Potamogeton	Pondweed	Sparse	
J	Juncus	Rush	Sparse	
U	Utricularia	Bladderwort	Sparse	
е	Eleocharis	Spike rush	Sparse	
M	Myriophyllum humile	Water milfoil	Sparse	

# **GENERAL OBSERVATIONS:**

1. Plants were sparse overall but were locally common in the inlet cove at the northwestern end of the lake.

OVERALL ABUNDANCE: Sparse

- 2. Bottom growth was common in the coves.
- 3. Leatherleaf was common along much of the shoreline.
- 4. A native species of milfoil was observed; not the nuisance exotic species.